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Order Instituting Rulemaking Regarding Broadband Infrastructure Deployment and to Support Service Providers in the State of California	R.20-09-001 (filed September 10, 2020)

OPENING COMMENTS OF AT&T CALIFORNIA (U 1001 C) ON ASSIGNED COMMISSIONER'S RULING DATED AUGUST 6, 2021 REGARDING MIDDLE-MILE BROADBAND NETWORK

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AT&T California ("AT&T") respectfully submits its opening comments in response to the Assigned Commissioner's Ruling ("Ruling") issued on August 6, 2021 in this proceeding.[1] This Ruling seeks public comment as required in Phase 3 of this proceeding, which was established by the Assigned Commissioner's Second Amended Scoping Memo and Ruling issued August 2, 2021. In Phase 3, the Commission will gather public comment to serve as the basis for its staff report ("Staff Report") regarding recommendations for the location of a middle-mile broadband network constructed by the State of California as required by Senate Bill 156.[2]

INTRODUCTION

The State of California has initiated an unprecedented effort to build a middle-mile network and make funds available for last-mile facilities to bring broadband services to Californians. The state budget includes $3.25B for middle mile and $2B for last mile facilities. Certainly, funding of this magnitude to support broadband services is historic and is intended to dramatically improve the provision of broadband services to unserved households. We encourage the state to focus on construction of facilities to unserved households with any funds not spent on middle-mile facilities used for last-mile facilities to unserved households.

Middle-mile facilities should be constructed only on those segments of highways where necessary to connect last-mile facilities to the Internet. Any middle-mile construction should be tied to existing or planned last-mile facilities to avoid building facilities that do not actually serve

[1] *Order Instituting Rulemaking Regarding Broadband Infrastructure Deployment and to Support Service Providers in the State of California*, R.20-09-001, Assigned Commissioner's Ruling (August 6, 2021) ("Ruling"). On August 20, 2021, the Assigned Administrative Judge extended the deadline for opening comments until September 3, 2021.

[2] Senate Bill 156, Chapter 112 (Cal. Stat. 2021).

any households. Many companies that have fiber deployments throughout the state, and these assets should be leveraged to the state's advantage so state-funded middle-mile efforts are used efficiently. This approach will ensure the state focuses its efforts where it can connect those who are currently unserved. Any middle-mile funding not spent should be used for last-mile projects which connect unserved households to the Internet.

Within this framework, the Commission has an important role to play. Included in Senate Bill 156, Government Code Section 11549.54(a) requires the Commission to provide a Staff Report recommending the locations for a middle-mile broadband network. Pursuant to Section 11549.54(b), the Commission must identify middle-mile broadband network locations to enable last-mile service connections in communities where there is no known middle-mile infrastructure that is open access, with sufficient capacity, and offered at affordable rates. AT&T appreciates the Commission's undertaking to identify existing middle-mile networks so the state will focus its funding on those locations that require middle-mile facilities.

To accomplish the task at hand, the Commission must gather a factual record of the existing fiber networks in the state to show where the state should not build middle-mile facilities. To that end, the attached AT&T Fiber Map shows AT&T has deployed fiber that blankets its ILEC territory as well as fiber deployed outside its territory.[3] AT&T also addresses herein how its fiber network is made available on an open access basis, offered at affordable rates, and has sufficient capacity. Of particular importance, the AT&T Fiber Map shows that

[3] AT&T Fiber Map, Attachment 1, is an overlay to the Commission's map which is accessible from Attachment 1 to the Ruling. Hereinafter, the Commission's map is referred to as the "Anchor Highways Map."

AT&T's Dedicated Internet ("ADI") service is available at over 80,000 locations in the state, thereby allowing ISPs to use the service to extend broadband service to unserved households.[4]

As evident by reviewing the AT&T Fiber Map, there are only a few highway segments in AT&T's territory that are not covered by AT&T's fiber network. Given this robust fiber network and the other fiber networks in California, the vast majority of the state highways shown on the Anchor Highways Map should be eliminated as part of the state's buildout of a middle-mile network. For the Staff Report, routes identified as lacking middle-mile facilities should be prioritized according to the unserved households in proximity to such routes and based on where existing or planned last-mile facilities require middle-mile infrastructure to connect to the Internet.

ARGUMENT

I. THE COMMISSION SHOULD IDENTIFY WHERE MIDDLE-MILE FIBER IS NEEDED AND THE NUMBER OF UNSERVED HOUSEHOLDS IN PROXIMITY TO THOSE ROUTES.

Government Code Section 11549.54(b) defines the criteria for recommendations for the location of the middle-mile network to be built by the state:

> The commission shall identify statewide open-access middle-mile broadband network locations that will enable last-mile service connections and are in communities where there is no known middle-mile infrastructure that is open access, with sufficient capacity, and at affordable rates.

Subsection (e) requires the Commission to identify state highways rights-of-way where the installation of the new broadband infrastructure should be prioritized. To implement these requirements, the Commission issued the Ruling with Attachment 1 entitled "Anchor Build Fiber

[4] Attachment 2 includes map of the locations of AT&T's Dedicated Internet service as an overlay to the Anchor Highways Map and a list of places with ADI availability.

Highways and Broadband Served Status by County" with a link to the Anchor Highways Map of certain highways and designations of households by Census Designated Places unserved at 100 Mbps. The Ruling asks which highways should be removed from the map. The vast majority of the anchor highways should be removed from the map because fiber networks already cover those routes. Once the highways on the Anchor Highways Map without fiber and the associated number of unserved households are identified, such segments should be prioritized based on the number of unserved households for each segment. As explained below, after issues regarding the map are resolved, the map will be a useful tool to identify and prioritize where middle-mile facilities should be constructed.

A. With Certain Revisions, the Anchor Highway Map Can Be Used As A Guide for Deployment of the State's Middle-Mile Broadband Network.

Because there is no explanation in the Ruling of the methodology used to create the Anchor Highways Map, it is not entirely clear how the Commission determined which highways to include as "anchors" and how it chose to place its unserved households indicators. From its review of the map, which has been recently updated to include additional layers, AT&T can now identify that the Commission mapped the State Highway Network layer using "State Highway Lines" from the California Department of Transportation (Caltrans) Traffic Accident Surveillance and Analysis System (TASAS) branch. The Commission then added what are labelled on the map as "Unserved Census Designated Places (100 Mbps Downstream)" ("Unserved CDPs").

The Commission appears to have connected these Unserved CDPs using state highway segments and then eliminated those highway segments that did not link Unserved CDPs. This appears to result in a new layer labelled as "Proposed Open Access Middle Mile Network Segments" on the map. Presumably, the Commission is suggesting that the resulting highway

segments between Unserved CDPs should all have fiber installed unless providers prove that middle-mile fiber already exists along those routes. The Commission should clarify how it created the map in order for the map to serve as a reliable foundation for determining where to build the network.

In addition to specifying its methodology, the Commission should revise its use of Unserved CDPs. For example, the Anchor Highways Map shows a large unserved CDP in the City of San Jose (greater than 5,000 unserved households). The Federal Registry defines CDPs as "statistical geographic entities representing closely settled, unincorporated communities that are locally recognized and identified by name."[5] The City of San Jose is not unincorporated and presumably should not be designated as a CDP. The map also only shows CDPs in cities, so it is not possible to identify unserved households in rural areas. To resolve this issue, the map should be used to identify highways that both do not have fiber and are necessary to serve as middle-mile facilities. The next step of the analysis would examine the unserved households that would be connected by middle-mile facilities on those highways at a more granular level in order to prioritize building to areas based on the number of unserved households.

Finally, the Anchor Highway Map should be revised because it uses 100 Mbps to determine unserved households. Section 11549.54(d) requires the Commission to use 25 Mbps as the threshold for determining locations for the state's middle mile network. Along with the changes described above, the map should be revised based on using 25 Mbps as the criterion to identify unserved households. The revised map should be distributed to parties for further public comment in this proceeding.

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[5] *See* https://www.federalregister.gov/documents/2018/11/13/2018-24571/census-designated-places-cdps-for-the-2020-census-final-criteria.

B. The Commission Should Overlay Existing Fiber Networks on the Anchor Highways Map to Identify Potential Locations for Construction of the State's Middle-Mile Broadband Network.

The Ruling asks which routes should be removed from the Commission's Anchor Highways Map, which is precisely the correct question to ask. It is indisputable that California already has a robust fiber network. Although the existence of fiber networks in California is readily apparent, AT&T understands the Legislature via Senate Bill 156 has requested information about the location of existing fiber networks to ensure that middle-mile fiber is not installed on routes that already have fiber in place or do not require fiber in order to connect unserved areas. The AT&T Fiber Map provides the Commission with an evidentiary basis for making that determination with respect to AT&T's network.

The Commission, however, cannot rely solely on AT&T's Fiber Map because there are multiple other fiber networks in California. The Commission should examine the fiber information from other parties in conjunction with AT&T's Fiber Map to remove additional highway segments from the Anchor Highways Map. Once the Commission completes this step, it would then have potential "Build Highway Segments" to be considered for attention by the middle-mile project funded by the state. Accordingly, the Commission should request fiber network information from the relevant parties to this proceeding as well as obtaining fiber information from non-parties, such as Lumen, who operate large fiber networks in California.

C. The Commission Should Recommend Prioritization Based on the Number of Unserved Households in Proximity to Build Highway Segments and the Associated Last-Mile Facilities.

The Commission is required by Section 11549.54(c) to recommend prioritization of the construction of the state's middle-mile network. The identification of the Build Highway Segments, where there is no existing middle-mile network and there is a need for middle-mile

facilities, is crucial as the first step in prioritizing where to build. The use of unserved households alone should not be considered because the location of unserved households does not necessarily indicate a lack of middle-mile facilities. Instead, the barrier issue for unserved households is often the lack of last-mile fiber facilities. That is why last-mile projects are crucial to improving service to unserved households California.

Once the potential Build Highway Segments are identified, further analysis is needed to ensure the segments are associated with existing or planned last-mile projects and there are unserved households associated with the segment. Building a new middle-mile network where there is no existing last-mile facilities and no designated project to build last-mile facilities would be a waste of resources. The project would consist of spending large amounts of money for a fiber facility that when completed, would not serve anyone. To avoid this outcome, each Build Highway Segment should be identified as in proximity to existing last-mile facilities or associated with specific last-mile projects that have received regulatory approval and appropriate funding. Regarding unserved households associated with Build Highway Segments, the Anchor Highway Map should be revised to show the specific unserved households in proximity to each segment. The prioritization could then be done based on the number of households associated with each segment to ensure the maximization of unserved households to potentially benefit from the state funding of middle-mile facilities.

The Ruling includes a question regarding prioritization based on percentage of unserved (100 Mbps) households by county.[6] An approach based solely on unserved households in counties should not be followed because it does not take into account the existing fiber network. If the Commission nonetheless decides to adopt such a county-based methodology, the

[6] Ruling at 5.

prioritization should be based on percentage households unserved at 25 Mbps as shown in Attachment 3 and should only include those counties where the Build Highway Segments are located.[7]

An example of prioritization based on counties is as follows: if the 40 miles along Highway 395 from Alturas north to New Pine Creek on the Oregon border is a Build Highway Segment because there are no existing fiber networks along this route, it could be prioritized for construction based on the unserved household percentage of 46.03% for Modoc County, which places the county as number 3 in unserved households on the 58 county list. In this example, Modoc County ranks high on percentage unserved and likely would qualify this segment as a top priority, but this project would serve less than a hundred households according to the Anchor Highways Map. While the Ruling mentions prioritizing segments on a county basis based on percentage households unserved, this example demonstrates that approach does not take into consideration the actual number of households to be served by each Build Highway Segment and risks spending large amounts of funding on routes that serve very few households. For these reasons, the Commission should prioritize Build Highway Segments based on actual unserved households in proximity to the segments.

II. AT&T'S MIDDLE-MILE FIBER NETWORK SERVES THE VAST MAJORITY OF THE ANCHOR HIGHWAYS IN ITS TERRITORY, AND A STATE MIDDLE-MILE BROADBAND NETWORK IS NOT NEEDED ON THOSE HIGHWAYS.

Section 11549.54(b) requires identification of middle-mile network locations where "there is no known middle-mile infrastructure that is open access, with sufficient capacity, and at

[7] The use of 100 Mbps in the Anchor Highway Map violates Section 11549.54(d) which specifies the use of 25 Mbps for the Commission's recommendations.

affordable rates."[8] AT&T's Fiber Map shows AT&T has deployed fiber middle-mile facilities throughout its ILEC service area and even beyond. Major competitors have blanketed those same areas with competing fiber facilities. AT&T and others use these middle-mile facilities to serve both wholesale customers (*e.g.*, ISPs seeking to use AT&T's transport facilities and/or services to connect their customers to points of interconnection with the internet, including wireless providers) and end-user customers (*e.g.*, residential and business customers purchasing retail internet and other services). In this fiercely competitive environment, multiple facilities-based providers compete for customers on both price and service quality. Accordingly, for middle-mile facilities offered in AT&T's ILEC service areas, the Commission should rely on the fact that competition keeps middle-mile services available, open, affordable, and with sufficient capacity in those areas.

A. Open Access

The Ruling seeks comment on the extent to which "existing middle mile routes are open access."[9] The term "open access" is defined in the statute as "equal non-discriminatory access to eligible entities on a technology and competitively neutral basis, regardless of whether the entity is privately or publicly owned."[10] AT&T's transport offerings, including middle mile, meet this definition because many different types of entities have access to AT&T's fiber network.

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[8] Pursuant to Section 11549.50(e), open access "means equal non-discriminatory access to eligible entities on a technology and competitively neutral basis, regardless of whether the entity is privately or publicly owned." The definition of open access in the Ruling at page 4 ("a network model that allows any entity to access and utilize the infrastructure at a fair market rate and in a non-discriminatory manner") does not mirror the statutory definition, and the statutory definition should be followed in this proceeding.

[9] Ruling at 4.

[10] Cal. Gov't Code Section 11549.50(e).

On the retail side, AT&T has end-user residential, small business customers, and enterprise customers that subscribe to AT&T's end-to-end broadband products, which provide all the transport, including middle mile, needed to connect the customer to the Internet. On the wholesale side, AT&T has ISP customers and other wholesale customers that purchase access to AT&T's transport facilities, including middle-mile facilities, on a standalone basis (*e.g.*, fiber-based Ethernet, OC-N, and other high capacity transport facilities), which they use to provide broadband connectivity to their own end-user residential and business customers. These customers include both privately-owned and publicly-owned entities. Many of these customers compete with AT&T for Internet and other end-user customers.

Moreover, AT&T markets its transport services, both online and with extensive sales and marketing teams, to all potential customers, regardless of technology or ownership type.[11] Many of AT&T's services can be purchased "off the shelf." In other cases, usually where customization is required, customers will work with AT&T's sales and engineering teams to develop the desired service at a negotiated price, often through competitive bidding. As an example directly relevant to this proceeding, AT&T Dedicated Internet ("ADI") service is available to customers at over 80,000 locations as shown on Attachment 2. ISPs can purchase this service to provide broadband service to end-user customers. In short, marketplace facts confirm that AT&T's middle-mile transport offerings are available on an "equal non-discriminatory [basis] to eligible entities on a technology and competitively neutral basis, regardless of whether the entity is privately or publicly owned."

[11] Information about all of AT&T's end-to-end and wholesale transport services is available on its website. *See, e.g.,* https://www.att.com/internet (residential services); https://www.business.att.com/portfolios/networking.html. (retail end-user services); https://www.business.att.com/categories/ethernet-and-transport.html (wholesale services, including Ethernet, OCn, and other high-capacity transport).

B. Affordability

The Ruling seeks comment on the extent to which existing open-access middle-mile facilities are affordable.[12] As explained below, the Commission should deem any privately-deployed middle-mile facilities to be affordable. Private companies deploy middle-mile facilities only after undertaking a thorough analysis of the economic viability of offering those services, including consideration of both expected use demand for these facilities and their expected deployment cost.[13] No private company chooses to invest in middle-mile facilities unless it believes that it can price these facilities to customers at rates that they will find affordable. A provider would not deploy facilities and price them at rates that yield zero or deficient customer revenue. Once middle-mile facilities have been deployed and their costs are sunk, providers have even more powerful economic incentives to ensure that customers can afford to purchase services over those facilities because idle facilities yield no revenue. Thus, the presence of existing middle-mile facilities means that the private entity has weighed all relevant factors and assumed the risks of significant investment after assuring itself that it can offer services on such routes that customers will find attractive and affordable.

Additionally, AT&T and other providers face intense competition for internet services, including middle-mile services, which further ensures that those services are affordable. For example, AT&T offers ADI services that provide internet connectivity for both retail end-users and wholesale customers throughout California. AT&T services can include, among other things, middle-mile transport connecting to AT&T's ADI ports. These ADI services are subject

[12] Ruling at 5-6.

[13] A private firm must consider a wide range of economic factors when deciding to deploy capital to construct a segment of middle-mile transport, including investment cost per household, population density in the area, the size of the target market, the geographic size of the target market, and other possible cost drivers related to the particular terrain.

to intense competition from multiple other facilities-based providers in California, such as, Lumen, Verizon, Fusion Connection, Zayo, and Granite, which ensures these services, including the middle-mile components, are disciplined by competition and thus are affordable. Moreover, many of AT&T's ADI customers are ISPs that, in turn, use these services to offer retail internet services to their own end users. These ISPs sometimes use AT&T's middle-mile transport services to interconnect with AT&T. But, in many cases, these ISPs instead choose to use middle-mile facilities obtained from other companies to reach AT&T's network. Thus, the middle-mile component of AT&T's ADI service is independently subject to intense facilities-based competition.

In this regard, the Federal Communications Commission ("FCC") has examined the marketplace for transport services throughout the country, including California, and has repeatedly found, on vast evidentiary records, that these services are subject to robust competition that disciplines rates. In 2005, the FCC concluded that entry barriers are sufficiently low that competitors can deploy their own higher capacity transport services to compete with local exchange carriers.[14] In 2007, the FCC eliminated price regulation for packet-based transport services (such as Ethernet) and all OCn-level transport services, after finding that those services are fully competitive,[15] emphasizing that there "are a myriad of providers prepared to make competitive offers" to customers seeking packet-switched data services "located both

[14] *See* Order on Remand, *Unbundled Access to Network Elements et al.*, 20 FCC Rcd 2533, ¶ 131 (2005) (finding "no impairment" in competitors' ability to deploy competing facilities with capacities above 12 DS3s); *see also* Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers et al.*, 18 FCC Rcd 16978, ¶ 388 (2003) (same).

[15] *See* Memorandum Opinion and Order, *Petition of AT&T Inc, for Forbearance under 47 U.S.C. § 160(c) from Title II and Computer Inquiry Rules with Respect to Its Broadband Services; Petition of BellSouth Corp. for Forbearance under 47 U.S.C. § 160(c) from Title II and Computer Inquiry Rules with Respect to Its Broadband Services*, 22 FCC Rcd 18705 (2007).

within and outside any given incumbent LEC's service territory."[16] More recently, the FCC examined "the most comprehensive collection of information ever assembled for a [FCC] rulemaking proceeding,"[17] which included granular industry-wide data showing the specific locations of transport and other facilities throughout the country. The FCC again concluded this vast record of evidence "demonstrate[d] widespread and increasing competit[ion]" for transport services.[18]

Where middle-mile services have been deployed, the Commission should find that those services are affordable because providers have strong incentives to ensure customers can afford to purchase their products and because robust competition disciplines rates. If one or more private entities have already deployed middle-mile facilities, middle-mile investment pursuant to Senate Bill 156 in that area should not be recommended. In this way, the Commission can focus its resources on deploying middle-mile facilities to areas where private firms have found it uneconomic to do so, thus facilitating broadband deployment where the lack of middle-mile facilities is an actual impediment to such services.

C. Sufficient Capacity

With respect to capacity, the Commission's focus should be on whether there is sufficient middle-mile capacity to avoid bottlenecks that would prevent providers from offering broadband services. The presence of an existing middle-mile service provider and that provider's determination of whether it can scale up its capacity to meet the forecasted demand for middle-

[16] *Id.* ¶ 22.

[17] Tariff Investigation Order and Further Notice of Proposed Rulemaking, *Business Data Services in an Internet Protocol Environment*, 31 FCC Rcd 4723, ¶ 43 (2016).

[18] Report and Order on Remand, *Business Data Services in an Internet Protocol Environment et al.*, 34 FCC Rcd 5767, ¶ 16 (2019).

mile services are evidence of the sufficiency of capacity in any particular middle-mile segment. Where AT&T offers middle-mile connectivity, as shown on the AT&T ADI Map, AT&T has sufficient capacity to offer middle-mile transport.

For major carriers like AT&T, maintaining sufficient network capacity is crucial to their existence. As discussed above, AT&T offers retail and wholesale services in an extremely competitive marketplace. Any failure to deploy the capacity needed to reliably serve customers at the required speed, quality, and reliability will result in substantial customer losses to competitors. AT&T thus has enormous incentives to ensure that its network, including middle-mile facilities, has sufficient capacity to serve its current and future customers, and it does so.

Even beyond competitive losses, failure to maintain sufficient capacity could expose AT&T to substantial contractual penalties and damages. In general, AT&T's services provided to wholesale and business customers that use AT&T's middle-mile facilities are provided pursuant to contracts that include "service level agreements" ("SLAs"). These SLAs include terms for service, such as throughput (*i.e.,* speed), quality (*e.g.*, packet loss, jitter), and reliability (*i.e.*, uptime guarantees, such as 99.99%). Insufficient capacity can undermine AT&T's ability to satisfy these SLAs, which could expose AT&T to substantial contractual penalties or damages.

AT&T thus has robust systems for ensuring sufficient capacity for all components of its network, including middle-mile transport services. AT&T's engineers generally focus on expected usage during peak times and ensuring sufficient capacity in the network to serve that capacity both today and in the future. Using forecasting methods developed over the years based on analysis of market demand, AT&T forecasts for fiber and conduit as well as electronics and even central-office construction. AT&T's fiber network provides sufficient capacity to meet

current demand, and AT&T follows its forecasts in terms of planning additional capacity over the coming years. AT&T and other providers constantly monitor usage, and where capacity constraints arise, they typically augment capacity using a number of approaches, including upgrading the electronics used to light the fiber, lighting spare fiber strands, or where necessary, deploying additional fiber strands. AT&T thus has a variety of methods to increase capacity when needed.

For these reasons, the Commission should recognize time-tested strategies that providers use to ensure sufficient capacity. AT&T delivers high levels of service quality today, and those real-world results confirm that AT&T's methods for maintaining sufficient middle-mile capacity are effective. Thus, the Commission should find that where providers have deployed middle-mile transport facilities, there is sufficient capacity.[19]

Based on the foregoing, AT&T's fiber network meets the statutory definition of middle-mile facilities, and state funds should not be used to overbuild middle-mile networks operated by AT&T and other companies. Such construction would be wasteful of resources that could be redirected to other efforts to ensure broadband availability for all consumers.

III. Issues for Public Comment

A. Identifying Existing Middle Mile Infrastructure

What routes, if any, should be modified, removed from consideration, or revised? Are there existing middle mile routes that are open access, with sufficient capacity, and at affordable rates on the county highway routes listed in Attachment A? In the context of these comments, what is sufficient capacity and affordable rates? For routes that are identified as being open access, with sufficient capacity, and at affordable rates, how should the Commission verify these claims (*e.g.*, should Communications Division send a data

[19] Data requests are not needed (*see* Ruling at 5) to assess whether capacity is sufficient. It cannot reasonably be determined whether existing capacity in a particular area is sufficient in the abstract based on fiber counts or other information collected through a data request. Capacity is constantly in flux on different segments of fiber networks, making an accurate assessment of exact capacity on each highway segment nearly impossible.

request for service term sheets, rates, approximate dark fiber, lit fiber, and conduit capacity, etc.)? Are there any other criteria that should be used to verify these claims?

As discussed above in Section II, the AT&T Fiber Map shows where AT&T has deployed middle-mile fiber facilities along the Anchor Highways identified by the Commission. The Commission should overlay on its map the fiber networks of other entities. Based on that aggregated data on the Anchor Highways Map, the Commission will see which middle-mile facilities do not exist in the state and can create a list of potential Build Highway Segments. Then, the Commission should screen that list to ensure there are unserved households associated with each segment and there is not an alternative existing fiber route that could be easily used to serve that area. Any routes remaining should be identified in the Staff Report.

B. Priority Areas

Is it reasonable to assume counties with a disproportionately high number of unserved households (*e.g.*, 50% or more unserved at 100 Mbps download) are areas with insufficient middle-mile network access? What other indicators, if any, should the Commission use to identify priority statewide open-access middle-mile broadband network locations (*i.e.,* built expeditiously, areas with no known middle-mile network access, regions underserved by middle-mile networks, regions without sufficient capacity to meet future middle-mile needs)?

It is not reasonable to assume that counties with a disproportionately high number of unserved households have insufficient middle-mile network access. To the contrary, a reasonable assumption is that counties with high levels of unserved households lack last-mile facilities needed for high-speed broadband service. Furthermore, a generalized county-level determination of whether an entire county is unserved with respect to middle-mile service availability does not lead to an accurate prioritization of those areas that are truly in need of middle-mile facilities. As discussed above in Section I.C, location-specific information should be utilized to identify and prioritize unserved households at 25 Mbps within each county in proximity to the Build Highway Segments as the focus for prioritization.

AT&T does not support using the percentage of unserved households by county for prioritization of middle-mile build projects. However, if the Commission decides to use such a system for prioritization, Section 11549.54 (d) requires that the Commission "prioritize locations that enable last-mile connections to residences unserved by 25 Mbps downstream and 3 Mbps upstream." The Anchor Highways Map uses 100 Mbps. This approach should be changed to comply with Section 11549.54(d) by using 25 Mbps downstream and 3 Mbps upstream for prioritizing unserved households. AT&T has reviewed the counties using this criteria along with 477 data and US Census data. Although AT&T does not support this approach for the reasons explained above, Attachment 3 shows the prioritization that should be followed if counties are used.

C. Assessing the Affordability of Middle Mile Infrastructure

A key consideration is determining the cost of various middle mile services. Through identifying the costs of these services in California, as well as across the country and globe the Commission can identify a threshold whereby services can be considered reasonably affordable. What are existing providers paying or charging for middle mile services? Are there other factors or sources of information the Commission should consider for determining whether these services are affordable? Is it reasonable for the costs of these services to change depending on the location where the service is provided (*i.e.*, rural vs urban)?

AT&T's response to the affordability issue is included in Section II.B. As discussed therein, the middle-mile services are competitively priced and thus are market-based and affordable within the meaning of the statute. There is intense competition to provide the internet connectivity services that rely on these competitively supplied middle-mile transport facilities. The competition, at both the internet service and underlying middle-mile transport levels, ensures that the relevant rates are affordable in those areas.

D. Leasing Existing Infrastructure

If there is existing open access communications infrastructure with sufficient capacity to meet the state's needs, should the state purchase IRUs from that network? Is there any value in the state purchasing an IRU from the network if capacity is already available? If the state relies on IRUs for the development of the statewide network, will the generational investment that this funding provides be diminished when the IRU leases end 20 to 30 years later? Will existing networks run out of spare capacity?

California Government Code Section 11549.54(f)(1) directs the Commission to "solicit and receive public comments" on two issues related to the middle-mile broadband networks:

> (A) The current locations, routes, availability, technical performance characteristics, and other aspects of commercial sources of supply of middle-mile broadband network services.
> (B) The locations, routes, technical performance characteristics, network design, regeneration points, interconnection points and tie-ins, and other design, technical, business, and operational considerations that would increase the attractiveness and usefulness of the statewide open-access middle-mile broadband network for commercial internet service providers.

Given these statutory parameters, AT&T does not believe the Commission should include leasing in its inquiry, AT&T notes that providers generally prefer leasing facilities at market rates instead of building their own networks because it allows them to enter the market faster with less expenditures. This is particularly true in California, where numerous fiber networks are in place today. AT&T would expect the state would be able to lease existing facilities much faster and with less expense than building its own network. In turn, California consumers who are unserved could more quickly receive the anticipated benefits of the state operating a broadband network. This approach would also allow the state to operate a middle-mile network at lower rates, thereby freeing up more funds to build last-mile networks to provide services to unserved households.[20]

[20] The voluntary sharing of network assets could be facilitated by reforming the Commission's requirements related to Public Utilities Code Section 851. AT&T encourages the Commission to explore whether Section 851 reform would further such arrangements.

E. Interconnection

At what points should the statewide network interconnect (*e.g.,* to other networks, servers, etc.)? Are additional exchange points necessary or strategic, and if so, where?

The exact points of where the state middle-mile network will interconnect with the fiber facilities of other companies cannot be identified until after the state determines where the network will be built. Traditionally, companies interconnecting fiber-to-fiber do so at secured locations, such as central offices or carrier hotels, that house electronics associated with fiber facilities. Any interconnection location must be secure with only authorized personnel given access in order to protect the network.

F. Network Route Capacity

How many strands of fiber should the network deploy for each route? Are there other requirements or standards the Commission needs to consider to determine sufficient capacity? Should the network also deploy additional conduit within each route for potential future expansion? Should these factors change based on the population density and distance from the core network?

The issue of capacity is discussed above in Section II.C. Planning for projected capacity and growth are engineering and design considerations that require examination of numerous factors including current demand, projected or future demand, availability of capacity from competitors, and other factors that are better left to engineering and design teams. Additionally, the issues of how much fiber should be deployed for each route and the quantity of conduit to be constructed for each route are beyond the scope of the Commission's mandate set forth in Section 11549.54(f)(1). These issues will have to be addressed by qualified engineering and design teams.

CONCLUSION

To comply with Senate Bill 156, AT&T urges the Commission to aggregate the fiber maps of companies operating in California to ascertain where middle-mile facilities are needed along the Anchor Highways to bring broadband services to unserved households. The segments of the Anchor Highways with no middle-mile network located in proximity to unserved households should be identified in the Staff Report as routes where the state should build its middle-mile network.

Given the robust middle-mile networks in California, AT&T expects this analysis will show very few highway segments need to be built in order to bring broadband service to unserved households. The state will then have the opportunity to connect unserved households by focusing on needs for last-mile facilities. Accordingly, any funding not spent on building the identified highway segments should be used to build last-mile facilities which are the type of facilities needed to reach unserved households, especially in rural areas. In contrast, funding spent on middle-mile facilities that are not needed will be wasted.

Respectfully submitted,

/s/

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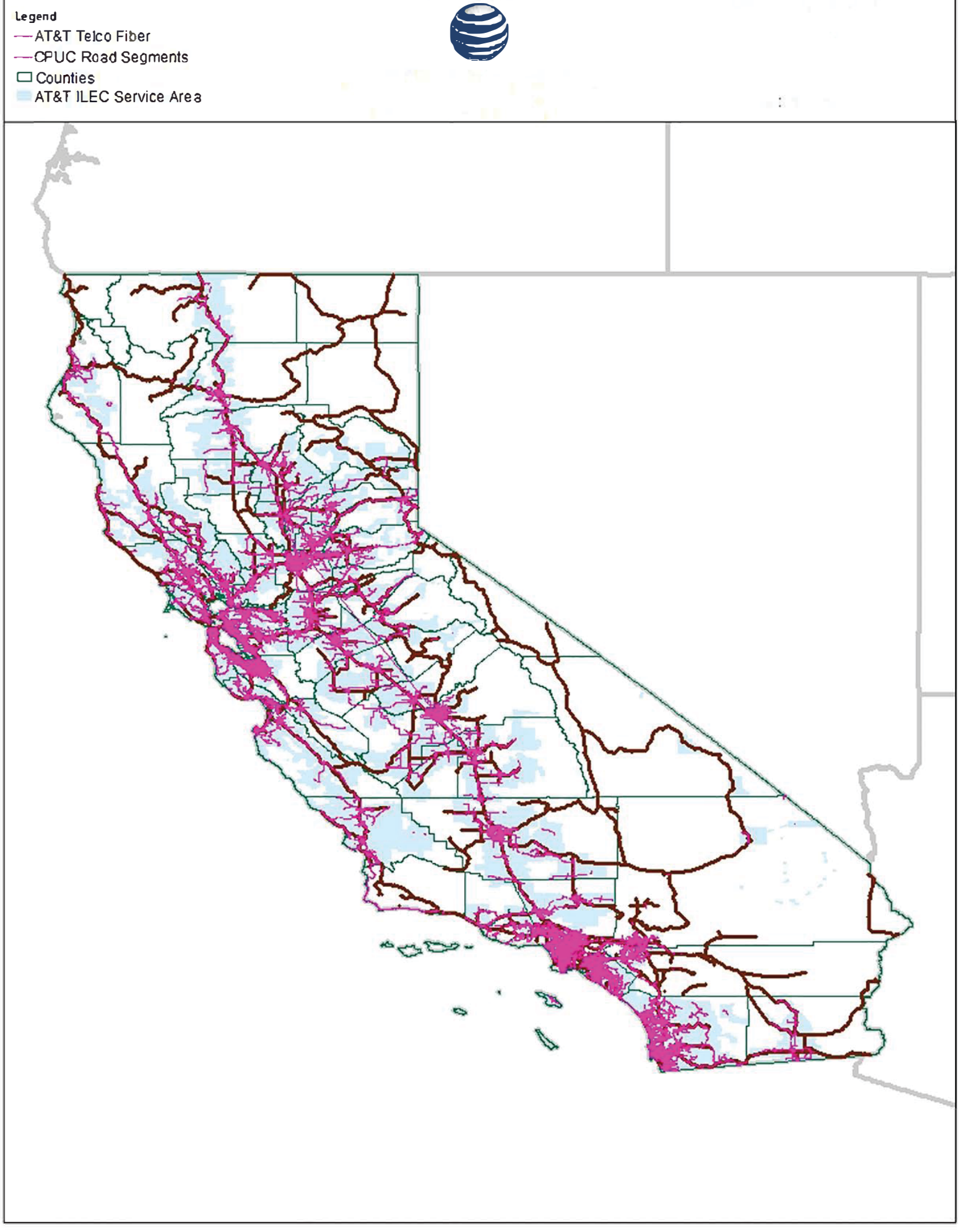
Attachment 1

AT&T Fiber Map

AT&T Fiber

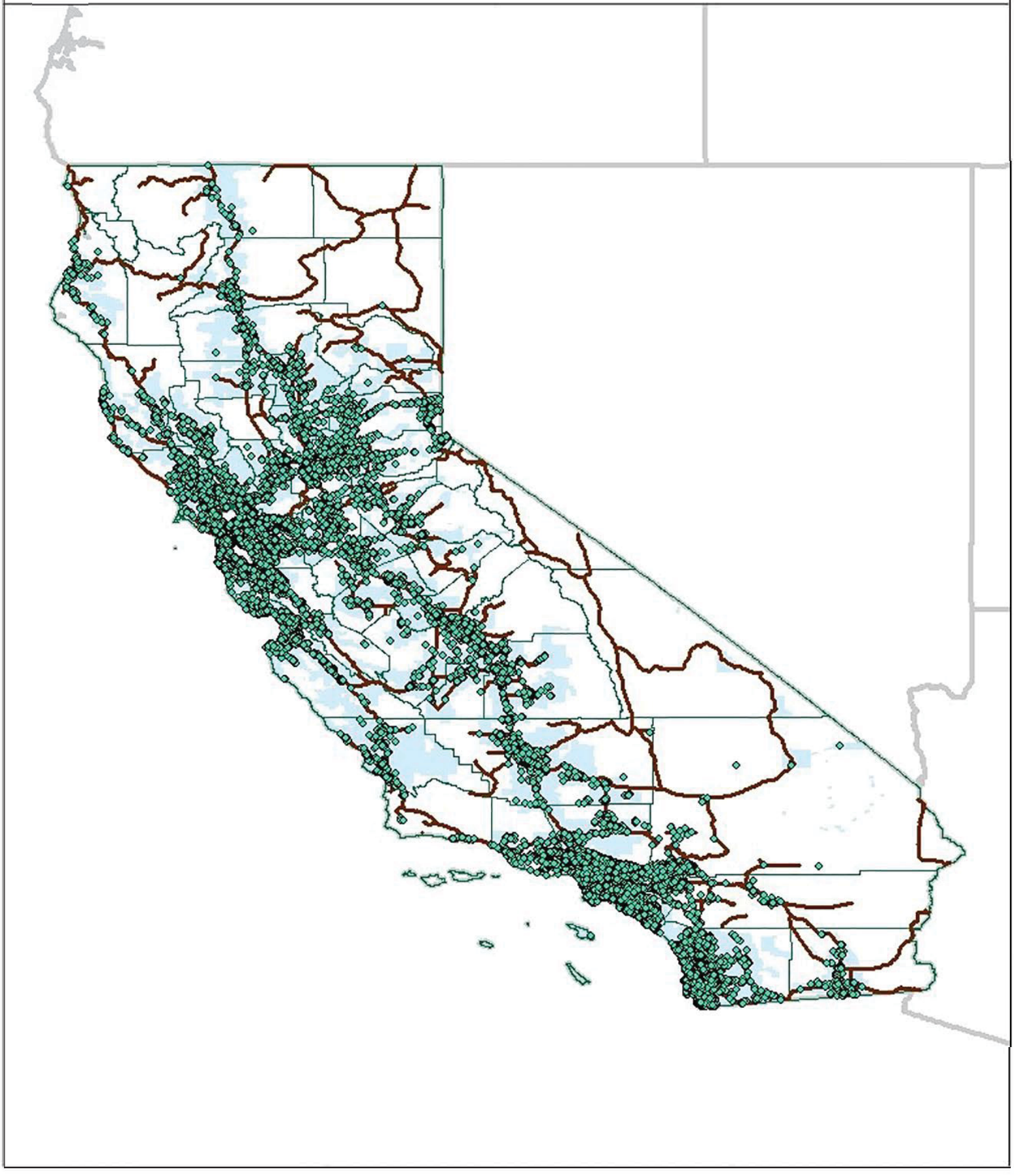

Legend
AT&T Telco Fiber
CPUC Road Segments
Counties
AT&T ILEC Service Area

Attachment 2

AT&T Dedicated Internet Service

AT&T Dedicated Internet Availability

Legend
- ADI Availability
- CPUC Road Segments
- Counties
- AT&T ILEC Service Area



Attachment 2
ADI Service is offered at one or more locations at each of the listed places.

ACAMPO
ACTON
ADELANTO
AGOURA HILLS
AGUA DULCE
ALAMEDA
ALAMO
ALBANY
ALBION
ALHAMBRA
ALISO VIEJO
ALPINE
ALPINE MEADOWS
ALTA
ALTA LOMA
ALTADENA
ALVISO
AMERICAN CANYON
AMERICAN CYN
ANAHEIM
ANDERSON
ANGELS CAMP
ANGWIN
ANNAPOLIS
ANTELOPE
ANTIOCH
APPLE VALLEY
APPLEGATE
APTOS
ARCADIA
ARCATA
ARLETA
ARMONA
ARNOLD
AROMAS
ARROYO GRANDE
ARTOIS
ARVIN
ATASCADERO
ATHERTON
ATWATER
AUBURN
AVALON
AVENAL
AVILA BEACH
AZUSA
BAKER
BAKERSFIELD
BALDWIN PARK
BARSTOW
BAY POINT
BAYSIDE
BEALE AFB
BEAR VALLEY SPRINGS
BEAUMONT
BELL
BELL GARDENS
BELLFLOWER
BELMONT
BELVEDERE
BELVEDERE TIBURON
BEN LOMOND
BENICIA
BERENDA
BERKELEY
BEVERLY HILLS
BIG SUR
BIGGS
BLOOMINGTON
BLUE LAKE
BODEGA
BODEGA BAY
BOLINAS
BONITA
BONSALL
BOONVILLE
BOULDER CREEK
BOULEVARD
BRADLEY
BRAWLEY
BREA
BRENTWOOD
BRISBANE
BROOKS
BROWNS VALLEY
BROWNSVILLE
BUENA PARK
BURBANK
BURLINGAME
BURSON
BUTTE CITY
BYRON
CABAZON
CALABASAS
CALABASAS HILLS
CALEXICO
CALIFORNIA CITY
CALIMESA
CALIPATRIA
CALISTOGA
CAMARILLO
CAMBRIA
CAMERON PARK
CAMINO
CAMPBELL
CAMPO
CAMPTONVILLE
CANOGA PARK
CANYON COUNTRY
CAPISTRANO BEACH
CAPITOLA
CARDIFF BY THE SEA
CARLSBAD
CARMEL
CARMEL VALLEY
CARMICHAEL
CARNELIAN BAY
CARSON
CARUTHERS
CASTAIC
CASTRO VALLEY
CASTROVILLE
CAYUCOS
CAZADERO
CERES
CERRITOS

Attachment 2
ADI Service is offered at one or more locations at each of the listed places.

CHALLENGE
CHATSWORTH
CHICO
CHINESE CAMP
CHINO
CHINO HILLS
CHOWCHILLA
CHUALAR
CHULA VISTA
CITRUS HEIGHTS
CITRUS HTS
CITY OF INDUSTRY
CLAREMONT
CLARKSBURG
CLAYTON
CLEARLAKE
CLEARLAKE OAKS
CLEARLAKE OKS
CLOVERDALE
CLOVIS
COALINGA
COBB
COHASSET
COLFAX
COLMA
COLOMA
COLTON
COLUMBIA
COMMERCE
COMPTCHE
COMPTON
CONCORD
COOL
COPPEROPOLIS
CORCORAN
CORNING
CORONA
CORONA DEL MAR
CORONA DL MAR
CORONADO
CORTE MADERA
COSTA MESA
COTATI
COTTONWOOD
COULTERVILLE
COVINA
COYOTE
CRESCENT CITY
CRESTON
CROCKETT
CROWS LANDING
CUDAHY
CULVER CITY
CUPERTINO
CUTLER
CYPRESS
DALY CITY
DANA POINT
DANVILLE
DAVENPORT
DAVIS
DEER PARK
DEL MAR
DEL REY
DELANO
DELHI
DENAIR
DESCANSO
DESERT HOT SPRINGS
DIAMOND BAR
DIAMOND SPRINGS
DILLON BEACH
DINUBA
DISCOVERY BAY
DIXON
DOBBINS
DOWNEY
DOWNIEVILLE
DRYTOWN
DUARTE
DUBLIN
DULZURA
DUNCANS MILLS
DUNNIGAN
DUNSMUIR
DURHAM
DUTCH FLAT
E RNCHO DMNGZ
EARLIMART
EAST LOS ANGELES
EAST PALO ALTO
EAST RANCHO DOMINGUEZ
EASTVALE
EDWARDS
EDWARDS AFB
EL CAJON
EL CENTRO
EL CERRITO
EL DORADO
EL DORADO HILLS
EL DORADO HLS
EL MACERO
EL MONTE
EL NIDO
EL PORTAL
EL SEGUNDO
EL SOBRANTE
EL TORO
ELK
ELK CREEK
ELK GROVE
ELVERTA
EMERALD HILLS
EMERYVILLE
EMIGRANT GAP
ENCINITAS
ENCINO
ESCALON
ESCONDIDO
ESPARTO
EUREKA
EXETER
FAIR OAKS
FAIRFAX
FAIRFIELD

Attachment 2
ADI Service is offered at one or more locations at each of the listed places.

FALLBROOK
FARMERSVILLE
FARMINGTON
FELTON
FIDDLETOWN
FIELDS LANDING
FILLMORE
FINLEY
FIREBAUGH
FISH CAMP
FIVE POINTS
FLORISTON
FOLSOM
FONTANA
FOOTHILL RANCH
FOOTHILL RNCH
FOREST KNOLLS
FOREST RANCH
FORESTVILLE
FORT BRAGG
FORT IRWIN
FORTUNA
FOSTER CITY
FOUNTAIN VALLEY
FOUNTAIN VLY
FOWLER
FRAZIER PARK
FREEDOM
FREMONT
FRENCH CAMP
FRESNO
FRIANT
FULLERTON
FULTON
GALT
GARBERVILLE
GARDEN GROVE
GARDEN VALLEY
GARDENA
GEORGETOWN
GERBER
GEYSERVILLE
GILROY
GLEN ELLEN
GLENDALE
GLENDORA
GLENN
GOLD RIVER
GOLD RUN
GOLDEN HILLS
GOLETA
GONZALES
GORMAN
GRANADA HILLS
GRAND TERRACE
GRANITE BAY
GRASS VALLEY
GREENBRAE
GREENFIELD
GREENWOOD
GRENADA
GRIDLEY
GROVELAND
GROVER BEACH
GUALALA
GUERNEVILLE
GUINDA
GUSTINE
HACIENDA HEIGHTS
HALF MOON BAY
HAMILTON CITY
HANFORD
HARBOR CITY
HATHAWAY PNES
HAWTHORNE
HAYWARD
HEALDSBURG
HEBER
HELM
HEMET
HERALD
HERCULES
HERMOSA BEACH
HESPERIA
HICKMAN
HIDDEN HILLS
HIDDEN VALLEY LAKE
HIGHLAND
HILLSBOROUGH
HILMAR
HOLLISTER
HOLTVILLE
HOMEWOOD
HOPLAND
HORNBROOK
HUGHSON
HUNTINGTON BEACH
HUNTINGTON PARK
HUNTINGTON PK
HURON
HYDESVILLE
IMPERIAL
IMPERIAL BEACH
INDIAN WELLS
INDIO
INGLEWOOD
INVERNESS
IONE
IRVINE
IRWINDALE
IVANHOE
JACKSON
JACUMBA
JAMESTOWN
JAMUL
JULIAN
JURUPA VALLEY
KEENE
KELSEYVILLE
KENSINGTON
KENTFIELD
KETTLEMAN CITY
KETTLEMAN CTY
KEYES
KING CITY
KINGS BEACH

Attachment 2
ADI Service is offered at one or more locations at each of the listed places.

KINGSBURG
KNEELAND
KNIGHTS LANDING
KNIGHTSEN
KORBEL
KYBURZ
LA CANADA FLINTRIDGE
LA CANADA FLT
LA CRESCENTA
LA GRANGE
LA HABRA
LA HONDA
LA JOLLA
LA MESA
LA MIRADA
LA PALMA
LA PUENTE
LA QUINTA
LADERA RANCH
LAFAYETTE
LAGUNA BEACH
LAGUNA HILLS
LAGUNA NIGUEL
LAGUNA WOODS
LAGUNITAS
LAKE ELSINORE
LAKE FOREST
LAKEHEAD
LAKEPORT
LAKESIDE
LAKEWOOD
LAMONT
LANCASTER
LARKSPUR
LATHROP
LATON
LAWNDALE
LAYTONVILLE
LE GRAND
LEBEC
LEMON GROVE
LEMOORE
LEONA VALLEY
LINCOLN
LINDA
LINDEN
LINDSAY
LITTLERIVER
LITTLEROCK
LIVE OAK
LIVERMORE
LOCKEFORD
LODI
LOLETA
LOMA LINDA
LOMITA
LOMPOC
LONG BEACH
LOOMIS
LOS ALAMITOS
LOS ALTOS
LOS ALTOS HILLS
LOS ANGELES
LOS BANOS
LOS GATOS
LOS MOLINOS
LOS OSOS
LOTUS
LOWER LAKE
LUCERNE
LUCERNE VALLEY
LYNWOOD
MADERA
MADISON
MAGALIA
MALIBU
MANCHESTER
MANHATTAN BEACH
MANTECA
MARINA
MARINA DEL REY
MARINA DL REY
MARSHALL
MARTINEZ
MARYSVILLE
MATHER
MAYWOOD
MC FARLAND
MCCLELLAN
MCCLOUD
MCKINLEYVILLE
MEADOW VISTA
MENDOCINO
MENDOTA
MENIFEE
MENLO PARK
MENTONE
MERCED
MERIDIAN
MIDDLETOWN
MILL VALLEY
MILLBRAE
MILPITAS
MIRA LOMA
MIRANDA
MISSION HILLS
MISSION VIEJO
MODESTO
MOJAVE
MOKELUMNE HILL
MONARCH BEACH
MONROVIA
MONTAGUE
MONTARA
MONTCLAIR
MONTE RIO
MONTE SERENO
MONTEBELLO
MONTEREY
MONTEREY PARK
MONTROSE
MOORPARK
MORAGA
MORENO VALLEY
MORGAN HILL

Attachment 2
ADI Service is offered at one or more locations at each of the listed places.

MORRO BAY
MOSS BEACH
MOSS LANDING
MOUNT SHASTA
MOUNTAIN RANCH
MOUNTAIN VIEW
MURPHYS
MURRIETA
MYERS FLAT
N HIGHLANDS
N HOLLYWOOD
NAPA
NATIONAL CITY
NEVADA CITY
NEWARK
NEWBURY PARK
NEWCASTLE
NEWHALL
NEWMAN
NEWPORT BEACH
NEWPORT COAST
NICASIO
NICE
NICOLAUS
NILAND
NIPOMO
NIPTON
NORCO
NORDEN
NORTH HIGHLANDS
NORTH HILLS
NORTH HOLLYWOOD
NORTH PALM SPRINGS
NORTH SAN JUAN
NORTHRIDGE
NORWALK
NOVATO
NUEVO
OAK PARK
OAK VIEW
OAKDALE
OAKHURST
OAKLAND
OAKLEY
OAKVILLE
OCCIDENTAL
OCEANO
OCEANSIDE
OCOTILLO
OJAI
OLEMA
OLIVEHURST
OLYMPIC VALLEY
OLYMPIC VLY
ONTARIO
ORANGE
ORANGE COVE
ORANGEVALE
ORCUTT
OREGON HOUSE
ORINDA
ORLAND
OROSI
OROVILLE
OXNARD
PACHECO
PACIFIC GROVE
PACIFIC PALISADES
PACIFICA
PACOIMA
PAICINES
PALA
PALERMO
PALM DESERT
PALM SPRINGS
PALMDALE
PALO ALTO
PANORAMA CITY
PARADISE
PARAMOUNT
PARLIER
PASADENA
PASKENTA
PASO ROBLES
PATTERSON
PATTON
PAUMA VALLEY
PEARBLOSSOM
PEBBLE BEACH
PENN VALLEY
PENNGROVE
PENRYN
PERRIS
PESCADERO
PETALUMA
PHELAN
PHILO
PICO RIVERA
PIEDMONT
PILOT HILL
PINE MTN CLB
PINE VALLEY
PINEDALE
PINOLE
PIRU
PISMO BEACH
PITTSBURG
PIXLEY
PLACENTIA
PLACERVILLE
PLANADA
PLAYA DEL REY
PLAYA VISTA
PLEASANT GROVE
PLEASANT GRV
PLEASANT HILL
PLEASANTON
PLS VRDS EST
PLUMAS LAKE
PLYMOUTH
POINT ARENA
POINT REYES STATION
POLLOCK PINES
POMONA
POPE VALLEY
PORT HUENEME

Attachment 2
ADI Service is offered at one or more locations at each of the listed places.

PORTER RANCH
PORTERVILLE
PORTOLA
PORTOLA VALLEY
PORTOLA VALLY
POTRERO
POTTER VALLEY
POWAY
PT REYES STA
QUINCY
RAISIN CITY
RAMONA
RANCHO CORDOVA
RANCHO CUCAMONGA
RANCHO DOMINGUEZ
RANCHO MIRAGE
RANCHO MISSION VIEJO
RANCHO MURIETA
RANCHO PALOS VERDES
RANCHO SANTA FE
RANCHO SANTA MARGARITA
RANCHO STA MARG
RCH CUCAMONGA
RCH PALOS VRD
RCHO SANTA FE
RCHO STA MARG
RED BLUFF
REDCREST
REDDING
REDLANDS
REDONDO BEACH
REDWAY
REDWOOD CITY
REDWOOD VALLEY
REEDLEY
REPRESA
RESCUE
RESEDA
RIALTO
RICHGROVE
RICHMOND
RICHVALE
RIDGECREST
RIO DELL
RIO LINDA
RIO OSO
RIPON
RIVERBANK
RIVERDALE
RIVERSIDE
RNCHO CORDOVA
RNCHO DOMINGZ
RNCHO MURIETA
ROCKLIN
RODEO
ROHNERT PARK
ROLLING HILLS ESTATES
ROSAMOND
ROSEMEAD
ROSEVILLE
ROSS
ROUGH AND READY
ROWLAND HEIGHTS
ROYAL OAKS
RUTHERFORD
S EL MONTE
S PASADENA
SACRAMENTO
SAINT HELENA
SALIDA
SALINAS
SAMOA
SAN ANDREAS
SAN ANSELMO
SAN ARDO
SAN BERNARDINO
SAN BRUNO
SAN CARLOS
SAN CLEMENTE
SAN DIEGO
SAN DIMAS
SAN FERNANDO
SAN FRANCISCO
SAN GABRIEL
SAN GERONIMO
SAN GREGORIO
SAN JACINTO
SAN JOAQUIN
SAN JOSE
SAN JUAN BAUTISTA
SAN JUAN CAPISTRANO
SAN JUAN CAPO
SAN LEANDRO
SAN LORENZO
SAN LUCAS
SAN LUIS OBISPO
SAN MARCOS
SAN MARINO
SAN MARTIN
SAN MATEO
SAN MIGUEL
SAN PABLO
SAN PEDRO
SAN QUENTIN
SAN RAFAEL
SAN RAMON
SAN SIMEON
SAN YSIDRO
SAND CITY
SANGER
SANTA ANA
SANTA BARBARA
SANTA CLARA
SANTA CLARITA
SANTA CRUZ
SANTA FE SPRINGS
SANTA MARGARITA
SANTA MARIA
SANTA MONICA
SANTA NELLA
SANTA PAULA
SANTA ROSA
SANTA YSABEL
SANTEE

Attachment 2
ADI Service is offered at one or more locations at each of the listed places.

SARATOGA
SAUGUS
SAUSALITO
SCOTIA
SCOTTS VALLEY
SEAL BEACH
SEASIDE
SEBASTOPOL
SELMA
SEPULVEDA
SHAFTER
SHANDON
SHASTA
SHASTA LAKE
SHERMAN OAKS
SHINGLE SPRINGS
SIERRA MADRE
SIGNAL HILL
SILVERADO
SIMI VALLEY
SLOUGHHOUSE
SMARTSVILLE
SN BERNRDNO
SN JUN BATSTA
SN LUIS OBISP
SODA SPRINGS
SOLANA BEACH
SOLEDAD
SOMERSET
SOMIS
SONOMA
SONORA
SOQUEL
SOUTH EL MONTE
SOUTH GATE
SOUTH LAKE TAHOE
SOUTH PASADENA
SOUTH SAN FRANCISCO
SPRECKELS
SPRING VALLEY
SPRINGVILLE
STANFORD
STANTON
STEVENSON RANCH
STEVINSON
STINSON BEACH
STOCKTON
STRATFORD
STUDIO CITY
SUISUN CITY
SUN CITY
SUN VALLEY
SUN VILLAGE
SUNLAND
SUNNYVALE
SUNOL
SUSANVILLE
SUTTER
SUTTER CREEK
SYLMAR
TAHOE CITY
TAHOE VISTA
TAHOMA
TARZANA
TECATE
TEHACHAPI
TEHAMA
TEJON RANCH
TEMECULA
TEMPLE CITY
TEMPLETON
TERRA BELLA
THERMAL
THORNTON
THOUSAND OAKS
THREE RIVERS
TIBURON
TIPTON
TOLUCA LAKE
TOMALES
TOPANGA
TORRANCE
TRABUCO CANYON
TRACY
TRAVIS AFB
TRINIDAD
TROWBRIDGE
TRUCKEE
TUJUNGA
TULARE
TUOLUMNE
TURLOCK
TUSTIN
TWAIN HARTE
TWENTYNINE PALMS
TWIN BRIDGES
UKIAH
UNION CITY
UNIVERSAL CITY
UNIVERSAL CTY
UPLAND
UPPER LAKE
VACAVILLE
VALENCIA
VALLECITO
VALLEJO
VALLEY CENTER
VALLEY FORD
VALLEY SPRINGS
VALLEY VILLAGE
VALLEY VLG
VAN NUYS
VENICE
VENTURA
VERNALIS
VERNON
VICTORVILLE
VIEW PARK
VILLA PARK
VINA
VISALIA
VISTA
W LOS ANGELES
WALNUT
WALNUT CREEK
WALNUT PARK

Attachment 2
ADI Service is offered at one or more locations at each of the listed places.

WARNER SPGS
WARNER SPRINGS
WASCO
WATERFORD
WATSONVILLE
WEAVERVILLE
WEED
WEOTT
WEST COVINA
WEST HILLS
WEST HOLLYWOOD
WEST LOS ANGELES
WEST SACRAMENTO
WESTCHESTER
WESTLAKE VILLAGE
WESTLAKE VLG
WESTMINSTER
WESTMORLAND
WHEATLAND
WHITTIER
WILLITS
WILLOWS
WILMINGTON
WINCHESTER
WINDSOR
WINDSOR HILLS
WINNETKA
WINTERS
WINTON
WOODACRE
WOODBRIDGE
WOODLAKE
WOODLAND
WOODLAND HILLS
WOODLAND HLS
WOODSIDE
WRIGHTWOOD
YOLO
YORBA LINDA
YOSEMITE NATIONAL PARK
YOUNTVILLE
YREKA
YUBA CITY
YUCAIPA
YUCCA VALLEY
ZAMORA

Attachment 3

Percentage of Unserved Households at 25/3 Mbps by County

Percentage of Unserved Households at 25/3 Mbps by County

	Households		Households	
County	Unserved	Served	Unserved	Served
Alpine County	349	149	70.08%	29.9%
Modoc County	1,869	2,191	46.03%	54.0%
Sierra County	509	970	34.42%	65.6%
Trinity County	1,122	5,049	18.18%	81.8%
Mariposa County	1,161	6,619	14.92%	85.1%
Colusa County	1,055	6,109	14.73%	85.3%
Siskiyou County	2,649	16,921	13.54%	86.5%
Inyo County	911	7,145	11.31%	88.7%
Mono County	577	5,246	9.91%	90.1%
Mendocino County	2,593	32,505	7.39%	92.6%
Lassen County	740	9,298	7.37%	92.6%
Imperial County	3,352	46,548	6.72%	93.3%
Del Norte County	469	9,522	4.69%	95.3%
Yolo County	3,016	70,719	4.09%	95.9%
Lake County	1,033	24,565	4.04%	96.0%
Shasta County	2,313	68,268	3.28%	96.7%
Sutter County	1,026	30,728	3.23%	96.8%
Nevada County	1,256	41,390	2.95%	97.1%
Santa Barbara County	4,275	141,589	2.93%	97.1%
Kern County	7,645	256,059	2.90%	97.1%
Glenn County	274	9,644	2.76%	97.2%
Sonoma County	4,634	182,028	2.48%	97.5%
Plumas County	223	8,786	2.48%	97.5%
Solano County	3,609	142,363	2.47%	97.5%
San Bernardino County	12,338	615,153	1.97%	98.0%
Amador County	266	14,521	1.80%	98.2%
Sacramento County	9,093	519,470	1.72%	98.3%
San Luis Obispo County	1,775	103,826	1.68%	98.3%
Marin County	1,732	102,601	1.66%	98.3%
Orange County	15,484	1,029,604	1.48%	98.5%
Yuba County	357	24,676	1.43%	98.6%
Calaveras County	242	18,618	1.28%	98.7%
Napa County	609	48,607	1.24%	98.8%
San Diego County	13,937	1,123,181	1.23%	98.8%
Placer County	1,755	142,421	1.22%	98.8%
Humboldt County	692	56,362	1.21%	98.8%
Riverside County	8,730	713,873	1.21%	98.8%
El Dorado County	866	71,250	1.20%	98.8%
Tuolumne County	252	22,022	1.13%	98.9%
Tehama County	254	23,838	1.05%	98.9%
San Benito County	180	17,865	1.00%	99.0%
Ventura County	2,300	270,725	0.84%	99.2%
Monterey County	1,026	126,912	0.80%	99.2%
Butte County	539	76,784	0.70%	99.3%
Contra Costa County	2,111	385,595	0.54%	99.5%
Tulare County	613	135,553	0.45%	99.5%
Los Angeles County	12,340	3,316,084	0.37%	99.6%
Madera County	98	44,512	0.22%	99.8%
Fresno County	526	301,566	0.17%	99.8%
Kings County	55	42,750	0.13%	99.9%
San Joaquin County	71	224,849	0.03%	100.0%
Merced County	5	77,167	0.01%	100.0%
Alameda County	4	572,741	0.00%	100.0%
San Francisco County	-	368,938	0.00%	100.0%
San Mateo County	-	264,035	0.00%	100.0%
Santa Clara County		647,155	0.00%	100.0%
Santa Cruz County		95,959	0.00%	100.0%
Stanislaus County		166,815	0.00%	100.0%
State	134,910	12,890,439	1.04%	99.0%